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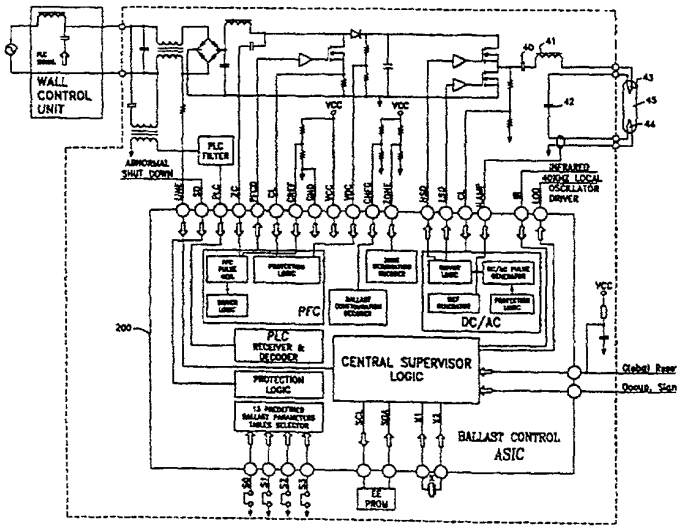
(54) Title: DIGITAL POWER CONTROLLER



(57) Abstract

A power controller for fluorescent lamp dimming is disclosed, using all digital internal and external programmable controls. A specific ASIC is described. A gate array and microcomputer share parallel functions with fast sub–functions carried out by the gate array and slower sub–functions carried out by a micro–processor. Circuits are provided for automatic shut down when a high frequency ground fault is detected; for connecting the filaments of gas discharge lamps in a series/parallel circuit; for driving the load as close to resonance as possible but in an inductive mode; and for developing a dead time between high side and low side switches which is related to transformer current, switch current, bridge voltage or bridge voltage dv/dt.